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or 5 prongs for 1.75-Bev bombarding energy become 68, 32, and 0.13 percent; for bombarding energy of 2.2 Bev, the probabilities are 62, 38, and 0.3 percent. For 3-pronged stars the probabilities of a star containing a single negative pion, or at least a negative and a neutral pion, or at least a positive and a negative pion, for bombarding energy of 1.75-Bev energy are 61, 11, and 28 percent; and for 2.2-Bev bombarding energy 47, 14, and 39 percent.

In this computation the possibility of deuteron formation by proton-neutron binding, as well as the elastic shadow scattering have been neglected.

Production of Polarized Particles in Nuclear Reactions, A. SIMON AND T. A. WELTON [Phys. Rev. 90, 1036 (1953)] and **Theory of Polarized Particles and Gamma Rays in Nuclear Reactions,** ALBERT SIMON [Phys. Rev. 92, 1050 (1953)]. In these two papers (hereafter referred to as I and II, respectively), the operators $T_\kappa{}^q$ were assumed to be tensor operators defined by the commutation relations given by Racah[1] and were normalized by the requirement that $T_0{}^q=P_q\times([i_\kappa/i(i+1)]^{\frac{1}{2}})$. Innes[2] has kindly pointed out that the normalization of the operators $T_\kappa{}^q$ cannot be correct for $q>2$ since for these cases the matrix element[3] $(ii|T_0{}^q|ii)$ has nonzero values for $2i<q$ and hence the operator will not be irreducible. The difficulty appears to lie in the circumstance that the commutation relations of Racah[1] are a necessary but not a sufficient condition for the irreducibility of the tensor operators. In our papers the operator $T_\kappa{}^q$ was assumed to transform irreducibly and the only use of the definition of $T_0{}^q$ was in normalizing the final result. Hence all general results such as angular dependences, selection rules, etc., are correct and all that must be changed is the coefficient preceding the summation symbol in several of the equations.

A suitable normalization of the tensor operators may be obtained by defining

$$T_0{}^q=\Sigma_m(iqm0|iqim)\chi_m{}^i\chi_m{}^{i*}, \tag{1}$$

where $\chi_m{}^i$ is a state vector of spin i and z component m. This operator is irreducible by construction. It is identical to the previous operator for $q=0$ and 1 and differs only by the constant factor $[4i(i+1)/[(2i-1)(2i+3)]]^{\frac{1}{2}}$ for $q=2$. Since all special cases discussed in the papers involve $q\leq 2$, all results for these cases will still be correct with the understanding that $T_0{}^q$ is as defined previously.

Equations involving the general operator $T_\kappa{}^q$ will have a changed coefficient which is easily found by the use of Eq. (1) and the procedure of Appendix A of I. The reduced matrix element of $T_\kappa{}^q$ is now $(2i+1)^{\frac{1}{2}}$ rather than $[(2i-q)!(2i+q+1)!]^{\frac{1}{2}}P_q([i/(i+1)]^{\frac{1}{2}})/(2i)!$ Hence the coefficient of Eq. (6.3) of I becomes $(\pi)^{\frac{1}{2}}\lambda_a{}^q(2i+1)^{\frac{1}{2}}/[2(2I+1)(2i+1)]$ rather than the more complicated expression given previously. The new coefficient of Eq. (3.2) of II is

$$\lambda_a{}^q[(2i'+1)(2q+1)]^{\frac{1}{2}}/\{4(2I+1)[(2i+1)(2q+1)]^{\frac{1}{2}}\}.$$

The correction for the remaining equations is similar.

We wish to take this opportunity to thank Dr. Innes for calling our attention to this point.

[1] G. Racah, Phys. Rev. 62, 442 (1942).
[2] F. R. Innes (private communication).
[3] See Appendix A of I.

Total Cross Section for Positive Pions in Hydrogen, STANLEY L. LEONARD AND DONALD H. STORK [Phys. Rev. 93, 568 (1954)]. In the issue, the word "Pions" in the title appeared incorrectly as "Ions."

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We are indebted to the South African Council for Scientific and Industrial Research for a grant, and for a bursary to one of us (F.D.B.).

[1] J. B. Birks, Phys. Rev. **86**, 569 (1952); **90**, 1131 (1953).
[2] J. B. Birks, *Scintillation Counters* (Pergamon Press, London; McGraw-Hill Book Company, Inc., New York, 1953).
[3] Bernstein, Chase, and Schardt, Rev. Sci. Instr. **24**, 437 (1953).
[4] Taylor, Jentschke, Remley, Eby, and Kruger, Phys. Rev. **84**, 1034 (1951).
[5] J. B. Birks, Phys. Rev. **84**, 364 (1951); Proc. Phys. Soc. (London) **A64**, 874 (1951).
[6] M. Curie, *Radioactivité* (Hermann et Cie., Paris, 1935).
[7] J. B. Birks, Phys. Rev. **94**, 1567 (1954).

Errata

Paramagnetic Scattering of Neutrons by Rare Earth Oxides, W. C. KOEHLER AND E. O. WOLLAN [Phys. Rev. **92**, 1380 (1953)]. The diffraction patterns of Fig. 4, page 1383, and Fig. 6, page 1384, should be interchanged with the figure numbers and captions held in their present location.

Small-Angle X-Ray Scattering from Liquid Helium I and Liquid Helium II, ARTHUR G. TWEET [Phys. Rev. **93**, 15 (1954)]. In the "note added in proof" on page 20, the last line should read "... at 4.16°K shown in Fig. 3 to 0.61." The number 0.61 appears incorrectly as 0.16.

The Half-Life of Lanthanum-140, H. W. KIRBY AND MURRELL L. SALUTSKY [Phys. Rev. **93**, 1051 (1954)]. In the first sentence of the fifth paragraph, instead of "... having a resolution time of 0.1 microsecond" read "... having a resolution time of 0.1 microminute." In the second sentence of the same paragraph, instead of "... a mixture of 90 percent methane and 10 percent argon" read "... a mixture of 90 percent argon and 10 percent methane." These errors do not affect either the data or the results.

The Scattering of Neutrons by Systems of Heavy Nuclei, G. PLACZEK [Phys. Rev. **86**, 377 (1952)]. Dr. von Dardel[1] and Professor Wick[2] have kindly directed the author's attention to the fact that Eqs. (7.20) and (5.17) contain elementary errors which are readily eliminated by correctly carrying out the substitutions indicated in the text above these equations.

The second and third lines of Eq. (7.20) for the contribution of the interference terms to the total cross section should be replaced by

$$+v_0^{-2}\langle(\cos 2k_0z_{ss'}-2k_0z_{ss'}\sin 2k_0z_{ss'})v_sv_{s'}\rangle_{kl}$$
$$+\frac{1}{\mu_s\mu_{s'}}\left\langle\frac{\sin 2k_0r_{ss'}}{k_0r_{ss'}}+\cos 2k_0r_{ss'}\right\rangle_{kl}.$$

The corresponding expressions (7.22) and (7.23) for the differential cross section, however, are given correctly.

The expression (5.17) for the average energy transfer should read as follows:

$$\langle E_l\rangle_{kl}=\frac{2\mu}{(\mu+1)^2}\left\{E_0-\frac{4}{3}K_{kl}\left(1-\frac{1}{4\mu}\right)+\frac{B_{kl}}{8E_0}\right.$$
$$\left.+\frac{4}{9}\frac{K_{kl}^2-\frac{3}{5}\langle K^2\rangle_{kl}+\frac{3}{5}B_{kl}}{\mu E_0}+O\left(\frac{K_{kl}^3}{\mu^2E_0}\right)\right\}.$$

The conclusions reached in the discussion of Eqs. (7.20) and (5.17) are in no way affected.

[1] G. von Dardel (private communication); see also G. F. von Dardel, *The Interaction of Neutrons with Matter Studied with a Pulsed Neutron Source* (Elanders Boktryckeri Aktiebolag, Goteborg, 1953).
[2] G. C. Wick (private communication).

Density Fluctuations at Low Temperatures, P. J. PRICE [Phys. Rev. **94**, 257 (1954)]. In Eq. (8) and the equation directly above it, S^2 should be N.

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